

Open peer review and authors' responses

# How to optimize respiratory models for SARS-CoV-2 research

Authors: Posch W, Dichtl S, Zaderer V, Lass-Flörl C, Wilflingseder D

Manuscript submitted 2022-03-27, 2022-08-16 (revision)

Manuscript accepted 2022-08-22

<https://doi.org/10.26124/bec:2022-0009>

## Reviewer 3

Julianna Zeidler

Institute of Medical Biochemistry Leopoldo de Meis, Federal University of Rio de Janeiro, BR

Manuscript reviewed 2022-04-09

<https://doi.org/10.26124/bec:2022-0009.r3>

\*Only major points from review and responses included.

### Reviewer 3

I'm unsure if the review fits the journal's scope. Although the authors mention "Respiratory models" in the title, there is nothing about bioenergetics in the manuscript. Instead, the manuscript focuses on different techniques for developing 3D cell cultures focusing on recapitulating airway tissues. So, it is a short review on cell biology techniques, but it does not even mention bioenergetics or related subjects. Maybe if the authors include a topic about how 3D models could be applied to high-resolution respirometry and cite papers that successfully did so, it would fit better into the journal's scope.

### Authors

An individual abstract was added to our manuscript: "2.5 Investigation of mitochondrial bioenergetics in 3D models". Within this section we want to demonstrate options for bioenergetic-analysis in 3D models. The abstract is supported by literature.

### Reviewer 3

The manuscript would greatly benefit from illustrations describing the different 3D models. Although the main text describes how these models are built, it is hard to have a good picture without figures, especially for non-expert readers.

### Authors

For a better understanding of Air Liquid Interphase culture of human respiratory epithelial cells, we additionally added a figure showing the ALI model of NHBE cells cultured in our laboratory. The image is added as Figure number 2 under the point "2.2 Respiratory air-liquid interphase (ALI) cultures."